

IN THE CLAIMS

1-14. (Canceled)

15. (New) An applicator for use in a system including joining elements for making an anastomosis between hollow structures, said applicator comprising:

a head provided with a plurality of arms, each said arm having a proximal end and a distal end, and wherein each said arm is movable from a first position at which the distal ends of the arms are separated by a first distance which is less than a distance of separation between the proximal ends of said arms when said arms are in the first position, to a second position, at which the distal ends of said arms are separated by a second distance, the second distance being greater than the first distance; and

a shank-like element associated with said head such that relative movement of said shank-like element and said head causes said arms to move from said first position toward said second position, and

wherein the distal ends of the arms are adapted to hold and position said joining elements for making an anastomosis between the hollow structures.

16. (New) The applicator according to claim 15, wherein a proximal portion of each said arm is attached to an attachment member.

17. (New) The applicator according to claim 16, wherein at locations of attachment of said arms to said attachment member, said arms are arranged around a portion of said shank-like element such that relative movement of said head and said shank-like element expand the arms radially outwardly, relative to an axis of said shank-like element.

18. (New) The applicator according to claim 17, wherein said arms expand from said first position to said second position by deformation.

19. (New) The applicator according to claim 15, wherein the shank-like element comprises a part located proximate to a distal end of said shank-like element for causing movement of the arms from the first position toward the second position.

20. (New) The applicator according to claim 19, wherein the part proximate to the distal end of the shank-like element comprises a surface portion in engagement with each said arm such that relative movement between the shank-like element and the head results in movement of the arms from the first position toward the second position.

21. (New) The applicator according to claim 20, wherein the arms move from the first position to the second position by deformation.

22. (New) The applicator according to claim 15, wherein said applicator further comprises a detainer for controlling movement of said joining elements.

23. (New) The applicator according to claim 22, wherein the detainer comprises a plurality of surface portions positioned to engage surface portions of said joining elements to thereby limit the movement of said joining elements relative to the detainer.

24. (New) The applicator according to claim 22, wherein said detainer is axially movable relative to said arms.

25. (New) The applicator according to claim 24, wherein said detainer is associated with said arms such that axial movement of said detainer results in positioning of said joining elements for making an anastomosis by engagement between a surface of each said joining element and a surface of each said arm.

26. (New) The applicator according to claim 25, wherein said surface portions of said arms which engage said joining elements are arranged such that said joining elements deform towards a joining position as said detainer is moved axially relative to said arms.

27. (New) The applicator according to claim 25, wherein said surface portions of said detainer are arranged such that said joining elements can become disengaged from said detainer when said joining elements are in the joining position.

28. (New) The applicator according to claim 22, further comprising a plurality of surface portions positioned to limit the extent of movement of said arms.

29. (New) The applicator according to claim 28, wherein said surface portions positioned to limit the extent of movement of said arms form part of said detainer.

30. (New) The applicator according to claim 28, wherein said surface portions positioned to limit the extent of movement of said arms form part of said head.

31. (New) A method of connecting a first hollow structure to a second hollow structure, comprising the steps of:

creating an opening in the second hollow tissue structure;

providing an applicator having a movable element, a sleeve, a distal end, a proximal end, a longitudinal axis, and a connector associated with the distal end of said applicator, the connector having an annular or tubular element and at least two deformable outer elements extending from the annular or tubular element in a proximal direction when said connector is associated with said applicator;

inserting at least a portion of the connector into the opening in the second hollow tissue structure;

radially expanding the connector by moving the movable element of said applicator from a first position to a second position; and

moving the sleeve of said applicator from a first position to a second position to cause at least a portion of the outer elements of the connector to deform outwardly relative to the longitudinal axis of said applicator when said connector is associated with said applicator.

32. (New) The method of claim 31, wherein in the providing step, the connector also has at least two deformable inner elements extending from the annular or tubular element in a distal direction, when said connector is associated with said applicator.

33. (New) The method of claim 32, further comprising the step of positioning at least a portion of the connector within the first hollow tissue structure, prior to said step of radially expanding the connector.

34. (New) The method of claim 33, wherein the moving step causes the outer elements and inner elements to clamp the first hollow tissue structure and the second hollow tissue structure between the inner elements and the outer elements.

35. (New) The method of claim 33, wherein the positioning step occurs before the inserting step.

36. (New) The method of claim 34, wherein said applicator comprises a plurality of arms, and said step of radially expanding the connector comprises movement of at least a portion of said arms radially outwardly relative to the longitudinal axis of the applicator from a first position to a second position.

37. (New) The method of claim 36, wherein each said arm comprises a deflection surface at a distal portion thereof, and at least some of said inner and outer elements of said connector to abut against said deflection surfaces during at least part of said step of moving said sleeve.

38. (New) The method of claim 36, wherein each said arm comprises a notch in a distal portion thereof, the applicator further comprises an elastic band located in said notches, and the method further comprises the step of moving the movable element of the applicator from the second position to the first position after the step of moving the sleeve, whereby said elastic band causes said arms to move from the second position to the first position.

39. (New) The method of claim 36, wherein said arms are connected at a proximal portion thereof by an annular part, and the method further comprises the step of moving the movable element of the applicator from the second position to the first position after the step of moving the sleeve, whereby said annular element causes said arms to move from the second position to the first position.

40. (New) The method of claim 39, wherein said arms comprise an elastic material and movement of said arms comprises deformation of said elastic material.

41. (New) The method of claim 36, further comprising the step of moving at least a portion of said arms from the second position to the first position, subsequent to the step of moving the sleeve.